

## READING PASSAGE 1

You should spend about 20 minutes on **Questions 1–13**, which are based on Reading Passage 1 below.

### **MALARIA**

*"Prevention is better than cure" - Desiderius Erasmus (1466-1536)*

Over many centuries of human existence, one infectious disease has been responsible for more fatalities and misery than any other – malaria. It is still rife today, with 300 million cases a year, despite a cure (quinine from the bark of the cinchona tree) having been found in Peru in the 1600s and despite the discovery in 1897 that it was carried by mosquitos and not "bad air" (*mal aria* in Italian). Sonia Shah, a journalist with a lifelong interest in malaria, posits three main reasons for the continued existence and prevalence of malaria.

The first reason is scientific. The protozoan parasite plasmodium that causes malaria is not only complex, but also devious. The pathogen is unusual in that it spends half its life in the gut of a cold-blooded mosquito and the other half inside a warm-blooded person. It metamorphoses seven times during its life cycle, presenting a different physiology at each stage, so a drug designed to attack the parasite in one phase may be ineffective in the other six. It can also remain dormant in the human body from days to decades. The vector for plasmodium is the anopheles mosquito and, as it is known that mosquitos generally breed in wet habitats, it would seem logical to carry out an extermination campaign directed at these. The problem is that different species of anopheles prefer different environments. Dirty stagnant water is an obvious target, but some prefer saline water and others breed in fresh, flowing water. Different species of anopheles mosquitos have different habits, too. Some remain exclusively outdoors, others are a menace indoors, while some species are not fussy at all. Although mosquitos are mostly associated with warm humid weather, some hibernate (with their parasites) through northern winters.

Malaria poses an enormous economic problem as it thrives in many of the world's poorest and most remote communities. There is a vicious but almost inescapable malaria-poverty cycle. Poor people do not have the resources to protect themselves from the mosquitos and malaria tends to hit hardest when farmers should be out harvesting their crops. Even if an affordable and effective vaccine were available, there is no infrastructure in these places to effect delivery – no roads, no electricity (for refrigeration), no clinics and no clinicians.

The third challenge is cultural. In malarious regions, this potentially lethal disease is 'normal' just as getting a cold or flu in winter is normal for people who live in temperate zones. As Sonia Shah points out: "if people think it's normal to have malaria, then how do you get them to run to the doctor to get diagnosed, to pick up their prescription, to get it filled, to take the drugs, to put on the repellents, to tuck in the bed nets?" assuming, of course, these recourses are available.

Taken together, the scientific, economic and cultural challenges generate a huge, paralysing political problem for the governors of malarious territories. Thus, the main assaults on malaria have been initiated by outside groups. The first large organised eradication campaign was begun in the 1950s by the U.S. State Department using DDT which they sprayed liberally everywhere, dousing human dwellings, mosquito breeding grounds and crops. Although the majority of mosquitos perished, those that survived the chemical bred new generations of mutated mosquitos until, by the mid-1960s, DDT-resistant mosquitos were everywhere. The World Health Organisation (WHO) renewed the chemical assault but targeted only the parasite this time. They had developed a synthetic antimalarial drug, chloroquine, which they distributed in parts of South America, Asia and Africa. The dissemination (as an addition to common table salt) was prolific and as it turned out reckless because, a few generations of plasmodium later, mutant parasites emerged and proliferated throughout the world.

Previously, many people living in societies plagued by malaria had developed partial immunity to the disease through being exposed to it and surviving. Now, however, owing to years of freedom from illness brought about by the DDT and chloroquine crusades, everyone was vulnerable and the death toll was huge. Since the late 1990s, a new fight has begun. This time, sidestepping the scientific and economic challenges by using a relatively inexpensive and practical instrument – insecticide-laced mosquito netting – the problem is overcoming the cultural obstacle. Because malaria is not regarded as a killer disease in susceptible communities, the population has to be encouraged to use the nets, and use them meticulously, despite the fact that they are hotter to sleep under, require rearrangement if disturbed, and may actually be problematical to hang – in a round hut, for instance.

Sonia Shah suggests that an alternative to destroying the mosquitos and/or their parasites is to eradicate the environmental conditions that harbour malarial mosquitos while at the same time improving the human habitat. This ecological tactic has led to removal of algae and rubbish from rivers and streams, drainage of swamps and stagnant ponds, coating puddles with larvae-suffocating oil, and clearing of vegetation from around homes and waterways. This method relies on recognition of the local conditions for mosquito breeding – that is, identifying the specific habitat whether it be fresh or brackish, stagnant or flowing water. Anything that reduces mosquito longevity by removing breeding facilities or exposing them to predators could effectively reduce malaria transmission because the plasmodium parasite does not become infective until the end of a 7–12 day cycle of development.

**Questions 1–8**

Complete the notes below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 1–8 on your answer sheet.

**The fight against Malaria**

- Age-old disease still widespread today.
- 17<sup>th</sup> century – **1** ..... discovered to effectively treat malaria
- 19<sup>th</sup> century – mosquitos revealed as the carrier (not *mal aria*)
- 3 problems to overcoming malaria:
  1. scientific
    - plasmodium pathogen: **2** ..... and tricky; lives in both mosquito (cold-blooded) and human (warm-blooded)
    - 7-stage life cycle; alters its **3** ..... during each phase
    - ability to stay **4** ..... for a short or long time
    - anopheles mosquitos like watery places for reproduction – should be focus for **5** ....., but different species favour different kinds of water
    - different habits: most like it hot, but some can **6** ..... in cold weather
  2. economic
    - malaria often occurs in poor places without any **7** ..... to allow distribution of treatment
  3. cultural
    - malaria, although life-threatening, is considered **8** ..... by those most likely to get it
- all these problems add up to a fourth, political challenge

## Questions 9–13

Do the following statements agree with the information given in Reading Passage 1?

In boxes 9–13 on your answer sheet, write

<b>TRUE</b>	<i>if the statement agrees with the information</i>
<b>FALSE</b>	<i>if the statement contradicts the information</i>
<b>NOT GIVEN</b>	<i>if there is no information on this</i>

- 9 DDT failed to kill all the mosquitos that were sprayed.
- 10 The WHO tried to kill mosquitos using chloroquine.
- 11 After the use of DDT and chloroquine, some people became immune to the disease.
- 12 People in malarious areas refuse to use the bed nets.
- 13 One aim of the environmental approach is to shorten the lives of mosquitos.

## READING PASSAGE 2

You should spend about 20 minutes on **Questions 14–26**, which are based on Reading Passage 2 below.

### The Benefits of Pilates and Yoga

Yoga originated in India about the fifth century BC, evolving over time as a mental, physical and spiritual discipline. Pilates is much younger, developed in the mid-1900s to help in the rehabilitation of injured dancers and athletes. Pilates focuses on the interconnectedness of the mind and body, drawing on the movements of calisthenics, yoga and ballet, whereas yoga focuses on the connection between mind, body and spirit. Exploring the spiritual side of yoga is an integral part of the practice.

The majority of studies into the benefits of Pilates have focused on its advantages for the physical body, and there is an arguable lack of empirical evidence for these. One study, which aimed to assess improvements in posture, involved 47 adults practising Pilates once a week for three months. Despite subjects reporting improved posture, their height, used as a measure, did not change. A second study exploring comparative effects of Pilates or weight training on posture found both groups experienced moderate change.

There is evidence to suggest that regular Pilates practice can help improve strength and flexibility. To what extent, particularly in comparison to other types of resistance training, is unsubstantiated although one study confirmed that Pilates improved strength equally to traditional resistance exercise (lifting dumbbells). A different study used electromyography (EMG), which measures muscle activity, to compare the effect of Pilates and abdominal crunches on two muscles in the core region: the rectus abdominis (the six-pack) and external obliques. The Pilates exercises produced EMG values that were higher than the crunch, supporting claims that Pilates increases core strength and stability. There is some justification for the use of Pilates in rehabilitation. There are several studies reporting that it leads to a significant reduction in pain intensity and disability in people with lower back injuries, for example. However, the number of studies is very small and the numbers of participants limited.

Research into the benefits of yoga has focused more on its contribution to wellbeing. According to yogi tradition, continued practice of *asana* (postures) and *pranayama* (breathing) increases *sattva*, a spiritual quality of light and love, the cultivation of which leads to greater equilibrium and less psychological and physical illness. One study by researcher Sudheer Deshpande attempted to substantiate this claim by involving 226 adults in a programme where they had either one hour of moderate physical exercise (PE) a day or one hour of yoga a day for eight weeks. The number of persons who showed enhancement of *sattva* – measured by responses to a questionnaire – was significant in the yoga group but not in the PE group.

Dr Andrew Weil, a medical researcher, claims that investigations into the value of yoga are neither overwhelming nor conclusive. In his view, one of the problems identified is that most

studies are done with small numbers of subjects. Others, such as the aforementioned Deshpande study, focus on trying to lay evidence to claims of the spiritual benefits of yoga, which as yet have found no support in Western science or medicine.

However, the value of deep breathing – an integral part of yoga practice – has found substantial support in medical science. Deep breathing has been shown to have numerous beneficial effects on health, some of which are easily measurable, such as the lowering of blood pressure. Dr Sheila Patel explains that abdominal breathing activates the parasympathetic nervous system, which reverses the body's stress response. Because the abdominal muscles and diaphragm are engaged, there is also less strain on the muscles of the neck and upper chest which assist shallow breathing; thus, tightness is released in these areas.

The Kripalu Center for Yoga and Health in the United States developed a four-month programme for 18–25 year olds combining daily asana and pranayama practice and study of the principles of yoga. Research on the effects of the programme found that it significantly predicted increases in quality of life and self-compassion, and decreases in perceived stress. The researchers suggested that yoga could be used to assist those coping with the stresses of studying, job-searching and transitioning to adulthood.

G. Duraiswamy compared the effects of four months of either daily yoga practice or exercise on schizophrenic patients. The exercise involved activities including walking, jogging and stretching. While there was a decrease in psychotic symptoms in both groups, the decrease was more pronounced in the yoga group. The yoga group also performed better in terms of perception of increased quality of life as measured by the World Health Organization Quality of Life (WHOQOL) form. In addition, yoga has been shown to be effective in relieving symptoms of depression, anxiety and obsessive-compulsive disorder.

Further studies suggest that emptying the mind of thoughts, achieved during yoga practice through concentration on the postures and breath, leads to variations in the neural circuitry of the brain. Dr Sara Lazar, an American neuroscientist, used MRI scans to monitor changes in the brains of a group of adults who participated in an 8-week programme. Prior to the study, participants had never meditated; during the study, they did so for 30–40 minutes a day for 8 weeks. Results showed greater activity in the left hippocampus at the end of the study, the hippocampus being the segment of the brain that assists learning, retention and recall, and emotional regulation. There was also greater activity in the temporo-parietal junction, which controls empathy and compassion, and a reduction in the size of the amygdala, which suggests a reduction in stress.

## Questions 14–18

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 14–18 on your answer sheet.

- 14 Pilates was originally designed as physical therapy for ..... and sportspersons.
- 15 The practice of yoga differs from Pilates in that it has a .....
- 16 Pilates practice does not seem to produce measurable effects on ..... .
- 17 EMG results indicate that gains in core strength are greater from Pilates training than ..... .
- 18 Pilates may be beneficial for sufferers of ..... pain although there is not a ..... great deal of research to prove this.

**Questions 19–24**

Look at the following findings (Questions 19–24) and the list of researchers below.

Match each finding with the correct researcher, **A–F**.

Write the correct letter, **A–F**, in boxes 19–24 on your answer sheet.

- 19** Yoga successfully reduces the characteristics of severe psychiatric disturbance, more so than other physical exercise.
- 20** The practice of yoga postures and breathing might be valuable for young adults facing difficulties in life.
- 21** The practice of yoga improves mental and emotional calmness and stability.
- 22** Meditation stimulates neuron activity in the brain.
- 23** Yoga provides relief from physical tension in the upper body.
- 24** Research on the benefits of yoga is insignificant and unconvincing.

**List of Researchers**

- A** Deshpande  
**B** Weil  
**C** Patel  
**D** Kripalu Center  
**E** Duraiswamy  
**F** Lazar

**Questions 25–26**

Answer the questions below.

Choose **NO MORE THAN THREE WORDS** from the passage for each answer.

Write your answers in boxes 25–26 on your answer sheet.



- 25**     What did WHOQOL assess?
- 26**     Which part of the brain is important for memory?

## READING PASSAGE 3

You should spend about 20 minutes on **Questions 27–40**, which are based on Reading Passage 3 on the following pages.

**Questions 27–33**

Reading Passage 3 has seven paragraphs, **A–G**.

Choose the correct heading for paragraphs **A–G** from the list of headings below.

Write the correct number, **i–x**, in boxes 27–33 on your answer sheet.

**List of Headings**

- i** A reflection of recent social developments
- ii** A high price to pay
- iii** A stunning success
- iv** Hopper's art no longer popular
- v** The end of an era in American art
- vi** Working with a new kind of paint
- vii** A grouping together yet detached
- viii** Speculation about origins of creative influence
- ix** First-time portrayal of new type of lighting
- x** Exact site of restaurant unknown

- 27** Paragraph **A**
- 28** Paragraph **B**
- 29** Paragraph **C**
- 30** Paragraph **D**
- 31** Paragraph **E**
- 32** Paragraph **F**
- 33** Paragraph **G**

## *Nighthawks*

**A** One of the most distinctive works of modern American art is Edward Hopper's *Nighthawks*. Completed in 1942 – the last touches were added on 21<sup>st</sup> January according to an annotation in Hopper's journal – the painting was immediately recognised as a masterpiece by the director of the Art Institute of Chicago, who called it “as fine as anything by Homer”, in a reference to the renowned American landscape painter. The Art Institute purchased *Nighthawks* for \$3000, an impressive sum at the time, and it has remained in the Institute's holdings to this day.

**B** The painting itself depicts a scene in a small urban diner, with three patrons sitting around a circular bar and a young barman reaching down, possibly preparing to mix a drink. One of the customers, in a suit jacket and bowler hat, sits alone with his back hunched and facing away from the viewer. Another man and a woman sit together, facing the viewer. They are seemingly a couple, yet each is unresponsive to the other's presence – they appear lost in their own thoughts. The male partner is possibly making eye contact with the waiter, yet here too their faces remain blank, with little sign of verbal engagement. Indeed, one of the contradictory effects of *Nighthawks* is how this motley gathering appears somehow intimate, enveloped by the dark streets outside, yet alone as individuals. As if to accentuate the sense of disconnection, Hopper does not paint any entrance to the diner – we see the inhabitants of this urban world only through surrounding plate glass windows and so we are as removed from their lives as they are from each other's.

**C** Perhaps the most impressive stylistic feature of *Nighthawks* is Hopper's depiction of the diner's fluorescent illumination, which cascades with eerie shades of paleness across both interior and exterior elements of the scene. At the time of painting, fluorescent lamps were a recent development, so Hopper ran into difficulty recreating its effects on canvas. An initial attempt to use zinc-based paint proved unsuccessful, as it later cracked and peeled, so the artist was forced to amend the painting using traditional lead-based paint. Nonetheless, the effect is striking and marks a truly modern turn in Western artwork.

**D** Thematically, *Nighthawks* seems to represent a shift in social relations that the USA was undergoing in the early decades of the 20<sup>th</sup> century. As cities boomed, along with their white-collar industries, inhabitants of rural areas began heading to metropolitan areas in search of better opportunities for employment. As the modern city took shape, these economic forces drew populations together while at the same time wedging them apart. Old family and community ties were broken, and new divisions, such as those of social class, became starker. Does *Nighthawks* represent a peek into this fractured landscape – the physical togetherness of the city alongside its alienating social forces? Although he typically resisted the urge to self-analyse his work, Hopper eventually conceded that, perhaps unconsciously, he was painting “the loneliness of a large city”.

**E** Just like the lives of the customers it depicts, much still remains a mystery about Hopper's painting. Although fans and critics have scoured historical photographs and street maps to ascertain the precise location of the restaurant (the painter revealed only that *Nighthawks* was based on "a restaurant on Greenwich Avenue where two streets meet"), the combination of structural elements such as the circular bar, the expansive plate-glass windows, and the bar's relatively small size, suggests that Hopper drew inspiration from several New York buildings.

**F** Another mystery – whether Hopper was inspired by any particular work of art – remains the subject of pure conjecture. His biographer, Gail Levin, suggests that Vincent Van Gogh's *Café at Night* was conceivably a source of inspiration, as it would have been on display at a gallery in New York in the months prior to the completion of *Nighthawks*. Another possibility is that Hopper was attempting to recreate visually the narrative style of Ernest Hemingway's short story *The Killers*. Hopper was a great fan of the story, applauding Hemingway's sparse and unsentimental style, and many art critics have noted a similar aesthetic in *Nighthawks*.

**G** *Nighthawks* stands today as possibly the last work of American representational art to achieve almost universal recognition across all strands of society. Because of this, Hopper's work has been subject to numerous homages and parodies in the mainstream of Western media, with references turning up in *The Simpsons*, the *Peanuts* comic strip, and even *Sesame Street* colouring books. In the decades following the release of *Nighthawks*, American art took an increasingly abstract turn through movements such as abstract expressionism and pop art. Although these subsequent traditions produced their own share of memorable imagery, ranging from Jackson Pollock's *No. 1* (1950) to Andy Warhol's infamous *Campbell's Soup Cans* (1962), *Nighthawks* remains a lasting symbol of its time and the acme of realism in the American visual arts.

## Questions 34–40

Do the following statements agree with the information given in Reading Passage 3?

In boxes 34–40 on your answer sheet, write

<b>TRUE</b>	<i>if the statement agrees with the information</i>
<b>FALSE</b>	<i>if the statement contradicts the information</i>
<b>NOT GIVEN</b>	<i>if there is no information on this</i>

- 34** Hopper recorded in his diary the exact date when he finished the painting.
- 35** The Art Institute of Chicago paid a lot of money for the painting because it was instantly thought to be a great work of art.
- 36** *Nighthawks* got its name because of the distinctive facial features of one of its characters.
- 37** *Nighthawks* was inspired by a single real-life diner incorporating a range of architectural features.
- 38** A painting by Van Gogh was exhibited shortly before *Nighthawks* was released.
- 39** Hopper enjoyed the short story *The Killers* because it showed strong emotion.
- 40** Works of popular culture have often made reference to *Nighthawks*.